

Patent claims

1. A mobile transmission device for transmitting images having

(a) first means (10) for optically capturing a transmission image motif and producing an image message from the transmission image motif,

(b) second means (11) for processing appropriately for transmission the image message produced,

(c) third means (12) for transmitting the image message, which can be connected via a telecommunications channel (2) to a reception device (3) for receiving the image message,

(d) fourth means (121, 130, 131) for controlling the functional sequences in the transmission device (1), in particular the first to third means (10, 11, 12),

characterized in that

(e) the first to fourth means (10, 11, 12, 121, 130, 131) are designed and connected in such a way that, when a telecommunications connection is set up between the transmission device (1) and the reception device (3) by the transmission of voice or control data initiating the image transmission, the image message is transmitted on the telecommunications channel (2) time-shifted with respect to the transmitted voice or control data and independently of the type of telecommunications channel (2).

2. The transmission device as claimed in claim 1, characterized in that the third means (12) are connected directly to the telecommunications channel (2).

3. The transmission device as claimed in claim 1, characterized in that the third means (12) are connected via an acoustic coupling with a telephone set to the telecommunications channel (2).

5 4. The transmission device as claimed in one of claims 1 to 3, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are contained in a mobile part of a wireless telephone.

10 5. The transmission device as claimed in one of claims 1 to 4, characterized in that the first means (10) and fourth means (121, 130, 131) are designed in such a way that the image information contained in the image message is composed of 100 x 100 image pixels having 16 shades of gray which can be represented by 4 bits per image pixel.

15 6. The transmission device as claimed in one of claims 1 to 5, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that, of the data bits defining the image pixels of the image information, initially only the most-significant bit is transmitted and, in the image build-phases which follow, the respectively next-most-significant bit is transmitted.

20 7. The transmission device as claimed in one of claims 1 to 6, characterized in that the first means (10) and fourth means (121, 130, 131) are designed in such a way that, beginning from the center point of the transmission image motif, pixels of the transmission image motif arranged toward the outside are composed spirally to form image information of the image message.

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8. The transmission device as claimed in one of claims 1 to 7, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that the image message is transmitted together with an error detection code.

5 9. The transmission device as claimed in one of claims 1 to 8, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that neighboring pixels or groups of pixels of the transmission image motif are composed in a time-shifted or interleaved mode to form image information of the image message.

10 10. Transmission device as claimed in one of claims 1 to 9, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that the speed at which the image messages are transmitted is adapted to the quality of the telecommunications channel (2).

15 11. The transmission device as claimed in one of claims 1 to 10, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that actual brightness values of the transmitted image message are assigned desired brightness values stored in an assignment table.

20 12. The transmission device as claimed in claim 11, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are designed in such a way that the actual brightness values are adapted to the desired brightness values stored in the assignment table to utilize the brightness dynamic range before the assignment.

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13. The transmission device as claimed in one of claims 1 to 12, characterized in that a first image message store (102) for buffer-storing the image messages is provided.

14. The transmission device as claimed in one of claims 1 to 13, characterized in that the first to fourth means (10, 11, 12, 121, 130, 131) are remote-controllable.

15. The transmission device as claimed in claim 14, characterized in that the fourth means (121, 130, 131) are remote-controllable by dialing by means of a telephone.

16. The transmission device as claimed in one of claims 1 to 15, characterized in that the first means (10) have optical searching means for the selection of an image motif area to be transmitted.

17. The transmission device as claimed in one of claims 1 to 16, characterized in that the first means (10) for capturing the transmission image motifs have focusing devices.

18. A mobile reception device for receiving images, having  
(a) fifth means (30) for receiving an image message transmitted by a transmission device (1), which can be connected via a telecommunications channel (2) to a transmission device (1),  
(b) sixth means (31) for processing appropriately for display the image message received and  
(c) seventh means (32) for displaying the image message in the form of a reception image motif which is an image of a transmission image

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motif optically captured by the transmission device (1),

(d) eighth means (300, 330, 331) for controlling the functional sequences in the reception device (3), in particular of the fifth to seventh means (30, 31, 32),

5 characterized in that

(e) the fifth to eighth means (30, 31, 32, 300, 330, 331) are designed and connected in such a way that, when a telecommunications connection is set up between the transmission device (1) and the reception device (3) by the transmission of voice or control data initiating the image transmission, the image message is received on the telecommunications channel (2) time-shifted with respect to the received voice or control data and independently of the type of telecommunications channel (2).

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19. The reception device as claimed in claim 18, characterized in that the fifth means (30) are connected directly to the telecommunications channel (2).

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20. The reception device as claimed in claim 18, characterized in that the fifth means (30) are connected via an acoustic coupling with a telephone set to the telecommunications channel (2).

20 21. The reception device as claimed in one of claims 1 to 3, characterized in that the fifth to eighth means (30, 31, 32, 300, 330, 331) are contained in a mobile part of a wireless telephone.

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22. The reception device as claimed in one of claims 18 to 21, characterized in that a second image message store (320) for buffer-storing the image messages is provided.

5 23. The reception device as claimed in one of claims 18 to 22, characterized in that ninth means (34) for signalling control signals to the transmission device (1) are provided.

10 24. The reception device as claimed in claim 23, characterized in that the ninth means (34) for signalling the control signals to the transmission device (1) are designed in such a way that the control signals are transferred directly or via an acoustic coupling to the telecommunications channel (2).

25. The reception device as claimed in one of claims 18 to 24, characterized in that the reception device (3) is designed as a portable personal computer (notebook).

15 26. The reception device as claimed in one of claims 18 to 24, characterized in that a connection interface (324) for a personal computer is provided.

20 27. The reception device as claimed in one of claims 18 to 26, characterized in that the fifth to eighth means (30, 31, 32, 300, 330, 331) are remote-controllable.

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28. The reception device as claimed in claim 27, characterized in that the fifth to eighth means (30, 31, 32, 300, 330, 331) are remote-controllable by dialing by means of a telephone.

5 29. Use of the transmission device as claimed in one of claims 1 to 17 and of the reception device as claimed in one of claims 18 to 28 in a telephone system for the transmission of images.

30. Use of the transmission device as claimed in one of claims 1 to 17 and of the reception device as claimed in one of claims 18 to 28 in a telephone system for black-and-white image transmission.

10 31. Use of the transmission device as claimed in one of claims 1 to 17 and of the reception device as claimed in one of claims 18 to 28 as a monitoring device.

15 32. Use of the transmission device as claimed in one claims 1 to 17 and of the reception device as claimed in one of claims 18 to 28 in a telephone system for the targeted transmission of visual information.

33. Use of the transmission device as claimed in one of claims 1 to 17 and of the reception device as claimed in one of claims 18 to 28 as a device based on the "movable eye" principle by direct coupling of the transmission device (1) to the reception device (3).

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